extent of this region to the length of the elongating zone. PICCARD'S method of 1904, which has lately been justified by HABERLANDT,[24] is considered by NEWCOMBE as "too precarious to be satisfactory." All the phenomena, he concludes, "accord equally well with the hypothesis of the extension of the sensitiveness through the elongating zone, but diminishing from the apex backward; or . . . . of a more equable sensitiveness through the elongating zone, and a stronger autotropism in the posterior than in the anterior part." We should much prefer the former hypothesis; if for no other reason, because it is unfortunate to postulate "autotropism" when it can be avoided.—C. R. B.

Development of Marchantia.—Because no consecutive account of the development of the sexual organs and sporogonium of Marchantia, complete in itself, has been published by one author, DURAND, while preparing slides for class use, has published an account of the development illustrated with a close series of figures.[25] The account contributes little which is new to students making a critical study of this form. For the first time, although it has been illustrated by CURTIS, formal attention is called to the familiar "mushroom anchor" foot. One striking feature in the development of the sporophyte has been overlooked: the sterile plate of cells at the apex of the capsule, and also the occasional appearance of a columella, which in some instances extends entirely through the center of the capsule. Because of its relation to the theory of sterilization of sporogenous tissue this plate of cells and the occasional columella should have some attention. —W. J. G. LAND.

The nucleus of bacteria.—MEYER claims[26] that the following methods will differentiate a nucleus in the bacteria. The particular form used was *Bacillus Pasteurianus*. First method: boil in water, stain 24 hours in hematoxylin, and differentiate in weak hydrochloric acid. The nuclei of young spores are sharply outlined. Second method: fix in Flemming's solution, harden in 20 per cent. alcohol, stain in Delafield's hematoxylin, and differentiate with hydrochloric acid. Third method: fix in Flemming's solution, harden in alcohol, stain in iron alum hematoxylin, and differentiate under the cover glass with ammonium ferrosulfate. Judging from the figures, this method gives the best results.

In the opinion of the reviewer, the fact that MEYER does not believe that any nucleus has as yet been demonstrated in the Cyanophyceae would not inspire confidence in his interpretation.—CHARLES J. CHAMBERLAIN.

Anatomy of Sapotaceae.—Incidentally, in seeking the origin of laticiferous tissue in Sapotaceae, Miss SMITH[27] made anatomical studies of seedlings of fourteen

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[24] BOT. GAZETTE **47**:482. 1909.

[25] DURAND, ELIAS J., The development of the sexual organs and sporogonium of *Marchantia polymorpha*. Bull. Torr. Bot. Club **35**:321–335. *pls. 21–25*. 1908.

[26] MEYER, ARTHUR, Der Zellkern der Bakterien. Flora **98**:335–340. *figs. 3*. 1908.

[27] SMITH, WINIFRED, The anatomy of some sapotaceous seedlings. Trans. Linn. Soc. London II. **7**:189–200. *pls. 25, 26*. 1909.